CONTENT ADDRESSABLE MEMORY (CAM) DEVICES THAT UTILIZE SEGMENTED MATCH LINES AND WORD LINES TO SUPPORT PIPELINED SEARCH AND WRITE OPERATIONS AND METHODS OF OPERATING SAME

Abstract of the Disclosure

CAM devices include a segmented CAM array that is configured to support a long word search operation (e.g., x8N search) as a plurality of overlapping segment-to-segment search operations that are each performed across different rows within a group of rows in the CAM array

5 and staggered in time relative to one another. To provide enhanced soft error immunity, these CAM devices may also include a CAM array having a row of lateral XY TCAM cells therein that are arranged in a repeating low-even, low-odd, high-even, high-odd sequence, where "low" and "high" represent the first and second halves of a CAM entry. Methods of

10 operating a CAM device may include staggering the timing of overlapping segment-to-segment search operations across different rows within a CAM array using force-to-miss control signals to establish miss conditions on match lines of rows that are not to participate in a respective ones of the segment-to-segment search operations.

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